

Akron - Mei Netanya

Request for Information (RFI)

For

Smart Utility Asset Management

Issued April 12th, 2011

Responses due by June 1st, 2011

This RFI is issued solely for information and planning purposes only and does not constitute a solicitation. Responses to the RFI will not be returned. Responses to this notice are not offers and cannot be accepted to form a binding contract. Respondents are solely responsible for all expenses associated with responding to this RFI.

1 Who we are?

1. The city of Akron is located in Ohio U.S. Mei-Netanya is the District Water Utility Association of the city of Netanya in Israel.
2. Both Mei-Netanya and Akron's Utilities Field Operations Division operates and maintain their respective municipality's water and wastewater distribution/collection systems, serving about 300,000 residents each in areas of 30 and 323 square Km and distribution networks of 350 and 1920 kilometers respectively.
3. The parties are collaborating in the frame of a bilateral relationship as part of the i2i (Innovation To Implementation) program, including developing methodologies and searching for advanced enabling solutions and technologies. This RFI activity is being led by a Joint Task Force and evaluation team.

2 What do we look for?

4. The parties are interested in 'collaboratively' improving their Utility Asset Management Programs. Both parties are looking for advanced computerized solutions that will enable rapid and constant evaluation of their respective systems for optimal decision-making, specifically with regards to the renewal/replacement of the various components in the ever aging infrastructure of both the water and wastewater networks.

3 What is this document?

5. This document is a call for information from prospective vendors and potential solution providers which may be interested to partner and/or bid for this unique, possibly Industry leading opportunity.
6. The purpose of this RFI is to gather information concerning state-of-the-art assessment products and their associated costs to assist future decision-making activities by the Task Force.

7. This RFI is being issued to obtain information only and is not intended to result in contracts or vendor agreements with any respondent. Respondents to this RFI will not be excluded from eligibility to participate in any future requests for proposals (RFPs) based on their decision to respond to this RFI or on the content of their responses to this RFI.
8. While being interested in responses that encompass all functional components, both parties are also interested in responses that cover discrete functional components of the entire system as well as solutions or components which still may require further development. The parties may discuss the potential of providing the required support, in possible various ways.

4 POC and Further information / Clarification?

9. For further information, suppliers are welcome to contact the following persons. Preferably via eMail.

William D. Marchand, P.E.
Civil Engineer III
Utilities Engineering
146 South High Street, Suite 300
Akron, OH 44308

Office: 330-375-2690 x4410
E mail: wmarchand@akronohio.gov

Office hours: 7:30am - 4:30pm,
Monday to Friday

Shay Siboni
Chief Engineer
Mei Netanya Water Association

Netanya, Israel

Office: 972-9-863-5000
E mail: shay.s@mei-netanya.co.il

Office hours: 8:00am-4:30pm,
Sunday to Thursday

Booky Oren
Chairman & CEO
Booky Oren – Global Water Technologies
89 Medinat Hayehudim St.
Herzliya, Israel 46766

Tel: 972 – 54-6667077
E mail: Booky@bookyoren.com

5 What is the Timeline?

10. The RFI response shall be submitted before June 1st, 2011 at 10:00 AM Akron local time/ 17:00 Netanya local time.
11. The parties will review all the RFI responses, and before November 1st, determine the four or five vendors we believe can best meet our objective. After November 1st, 2011, the parties will issue an RFP to these four or five vendors. Those RFP responses will be due back in early 2012. The winning vendor will be selected soon afterwards, and contract negotiations and project implementation will immediately follow.
12. Future RFP could be expected to be selectively issued by November 2011.
13. Selection and contract of solution provider could be expected by January 2012.

6 How to respond?

14. Responses should be submitted electronically in MS Word-readable, PDF and/or MS Excel formats to the attention of the contact persons listed above.

7 Confidentiality?

15. All information provided will be held in the strictest confidence but only to the extent permitted by applicable laws.
16. Confidential information should be clearly marked as confidential in the proposal. Any information submitted may be subject to applicable public records law.
17. Respondents are advised that after responses are received and reviewed by the Task Force, the contents will become public record and nothing contained in the response will be deemed to be confidential.

8 Disclaimer

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9 What are The Requirements from a Water Utility Asset Management System?

19. The proposed solution shall allow for rapidly assessing the condition of the assets and allow for prioritization of the renewal/upgrade of the water/wastewater system, including the following:
- a. Support decision making in renewal/replacement investment of infrastructure elements, in an easy and timely manner.
 - b. Allow for assessing, in real time, the life-cycle cost for operation that takes into account the replacement costs and risks involved.
 - c. Look at the whole picture – provide ‘holistic outlook’.
 - d. Predict failure modes of the various asset components.
 - e. Assess consequences of asset failure - risk analysis based on cost of consequence. Allows for prioritizing the risk, and grades the risk from severe to light.
 - f. Allow for value engineering in the system.
 - g. Provide optimal renewal/upgrade strategies.
 - h. Take into account all business, operational and maintenance processes used to identify, evaluate and validate new capital expenditure to assure best appropriate practices are in place, including the assignment of individual asset criticality based on operational parameters.
 - i. Provide alternative options for asset improvements, including non-asset solutions and the "do nothing" option.
 - j. Develop a process for linking all recommended activities in the asset management plan to strategic business goals in order to justify the recommended investment program as perceived by customers and governing bodies.
 - k. Provide a simple interface that allows for a clear understanding of the problems immediately and not something that requires data mining.
 - l. Integrate/interface the software with the current data bases at Akron and Mei Netanya (current data sources are listed in the appendix).
 - m. Provides an automatic report and graph generator.
 - n. Drastically reduce the required field tests for predicting failures and capable of accurately determining the expected replacement of each asset.
 - o. Determine the possible risk in money terms and gives a very simple answer to "what is the risk?"
 - p. Allow the decision maker to ask "what if" questions to mitigate the risk.
 - q. Allow for changing the basic assumptions used for the various models quickly, including the criticality of each asset.
 - r. Allow integration within the same computer system and not a different system – add on software.
 - s. Easily update new data automatically.
 - t. Easily calibrate all data and outputs.
 - u. Easily notes and resolves erroneous data.

- v. Providing sensible outputs that are backed by analysis.
- w. Use advance mathematical models including machine learning algorithms for determination of the output including the ability to determine criticality.

10 Implementation / Deployment

Several stages are envisioned in pursuing this enabling solution:

- **Phase 0** – initial feasibility study that demonstrates and proves the proposed solution.
- **Phase 1**- limited deployment in a neighborhoods / districts in Akron and Netanya (each with a population equivalent of approximately 20,000 residents)
- **Phase 2** – Full implementation within the Akron and Mei Netanya systems

11 Background

11.1 The Importance of Water Utilities Asset Management

Asset management is considered one of the most important issues facing the water industry worldwide. This is due to the ever-aging underground infrastructure coupled with severe economic constraints that do not allow for complete renewal of the system in a timely manner.

The last three decades could be tagged the following, in general as for the water industry:

- In the 70's and 80's the water industry was focused on being effective - "making it work"
- In the 90's the target was to be competitive - "efficiency"
- Today the concern is making it last – "sustainability"

Within this sustainability trend, it can be seen that many regulators and management boards now require that water companies provide enough information for decision making through the "due diligence" process. This in turn has spurred the development of many new techniques for asset management that have already been implemented in the water industry at the city level.

The need in asset management today is obtaining tools that circumvent the main drawbacks outlined above – tools that allow real time verification of the system data and provide a more efficient method for implementing a sound decision support tool that allows for optimally determining the various infrastructure components within the water and wastewater networks for renewal/replacement.

11.2 The Disadvantages of the Current State-of-the-Art Methodology

The main drawbacks of the current state-of-the-art methodology in asset management are:

- a. This is a very tedious and expensive methodology. It requires full commitment of upper management and an extensive staff. Determining the life cycle of every asset is clearly a

- very labor intensive task and evaluating the site-specific data efficiently requires dedicated and professional personnel.
- b. Requires continuous maintenance of the data by all parties. Since the system is constantly changing, the entire utility must be responsive in accurately updating the information in real time. This requires allocating dedicated personnel and steady upper management involvement.
 - c. This methodology, while in the scope of large water companies, is not fully possible for small and medium size utilities that are far less advanced in both data collection and possible resources.
 - d. Data is not always clear and precise. Since a large portion of the infrastructure is underground (sometimes for over 100 years) detailed plans of the exact location, materials and dimensions are not fully documented. This creates with the GIS system a 'false sense of security' that in turn will provide a false picture of the system.
 - e. The methodology in many ways is compromised by other social and corporate culture factors that cannot be introduced through risk management – e.g. construction of other underground infrastructure projects that are adjacent to the waterworks that might require renewal or rehabilitation.
 - f. Overcoming employee resistance – information within a utility is power... Many employees do not divulge their acquired information for the fear that after such information has been given, they will not be needed. In addition many employees may feel that by exposing the information past professional miscalculations will be uncovered. These corporate cultural issues can seriously hinder obtaining a full picture of the water system.

11.3 Evaluating an asset management program

The key steps evaluating an asset management program with the water industry include:

- a. Data collection and its integration within a uniform data base – this includes mapping and cataloging all assets within a GIS system together with work orders and burst pipe events. Includes existing data sets, work management systems, software applications here.
- b. Prioritization of inventory activities – by determining the rules for: criticality, hydraulic service reliability, and other issues.
- c. Pipe condition assessment – by conducting a vigorous material testing of the various assets and preparing survival curves for determining the end of life for each asset within the specific system.
- d. Risk analysis – preparing a detailed risk analysis for determining the minimal risk (cost) for implementation – getting the "best bang for the buck."
- e. Short and long term planning - preparing a long term plan for rehabilitation and renewal taking into account the risk assessment and other issues, while prioritizing short term items that need immediate attention.

Appendix

Current Available Data Bases

The following table outlines the main components of the current data bases in both Akron and Mei Netanya.

#	Category	Akron	Mei Netanya
1	GIS Geographic Information System (ESRI)	<ul style="list-style-type: none"> • ESRI ArcGIS Server Enterprise ver. 9.3.1 • Microsoft SQL 2008 • The GIS and CMMS are completely integrated 	<ul style="list-style-type: none"> • ESRI ArcGIS Server Enterprise ver. 9.3.1 • Miner & Miner ArcFM ver. 9.3.1.5725 • Microsoft SQL 2008 • The GIS, CRM and debt collections are fully integrated. • Silverlight 4.
2	CMMS Computerized Maintenance Management System or Work Order Management System (Infor EAM)	<ul style="list-style-type: none"> • Infor EAM 8.4 • Oracle 11 • The GIS and CMMS are completely integrated 	n/a
3	CRM	n/a	<ul style="list-style-type: none"> • Microsoft SQL 2005 express. • Magic 9.2 • Panorama BI graphical engine. • Clients: Virtual machine (java based)
4	CIS Customer Information System (enQuesta)	<ul style="list-style-type: none"> • enQuesta by Systems and Software • Oracle 10 	<ul style="list-style-type: none"> • Metro-polinet • Oracle 6g (Will be upgraded to 9g in the near future) • OracleBI 10g - Discoverer plus
5	Modeling	<ul style="list-style-type: none"> • Water-InfoWater from MWH Soft. • Based on ArcGIS Desktop 	<ul style="list-style-type: none"> • Based on ArcFM infrastructure models • Integrated into the ESRI model builder